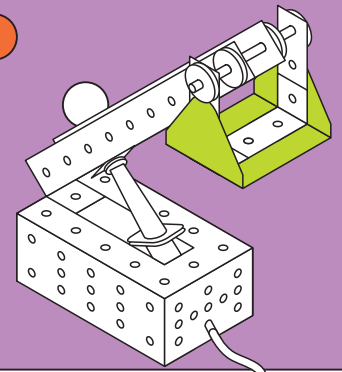




Visit TechCard at techcard.co.uk & Instagram & YouTube

Pneumatic Hoist

Workshop Pack Skill Level ● ● ● ○ ○



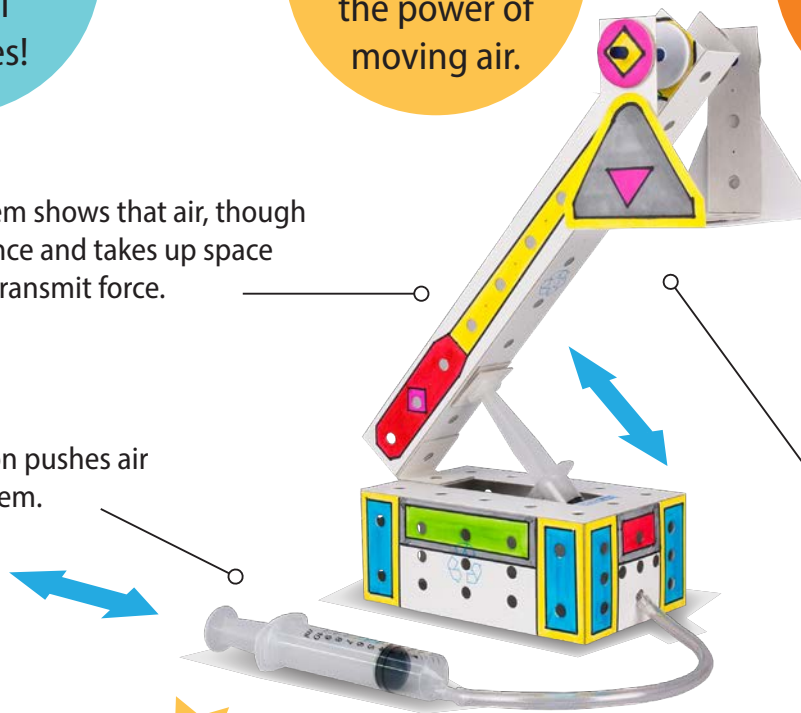
Build a
pneumatic
hoist that works
like real
machines!

Explore
how pneumatic
systems harness
the power of
moving air.

See how
to make with
TechCard
on our
website.

The pneumatic system shows that air, though invisible, is a substance and takes up space and can be used to transmit force.

Closing the piston pushes air through the system.



The arm of the
hoist is a lever.

Assembly videos on YouTube!

Parts to make 1 model

Structural Parts

TechCard Strip	1
TechCard Girder	1
TechCard Beam	1
TechCard Project Base	1

Mechanical Parts

25mm Disc	4
300mm Dowel Axle	1

Additional Materials

5ml Syringe x 1	A5 Size Thin Card x 1
10ml Syringe x 1	Small Sticky Foam Pad x 1
200mm Plastic Tube x 1	

You will have parts left over towards other models.

Parts to make 10 models

Structural Parts

TechCard Strip	10
TechCard Girder	5
TechCard Beam	10
TechCard Project Base	10

Mechanical Parts

25mm Disc	40
300mm Dowel Axle	4

Additional Materials

5ml Syringe x 10	A5 Size Thin Card x 10
10ml Syringe x 10	Small Sticky Foam Pads x 10
10	

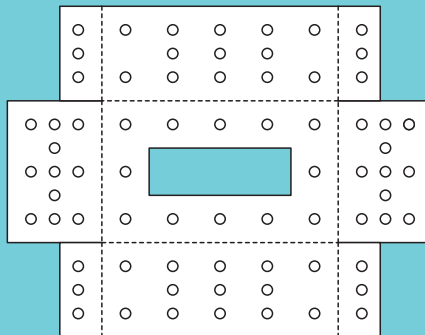
Based on pupils sharing off-cuts between them.

Make the Pneumatic Hoist

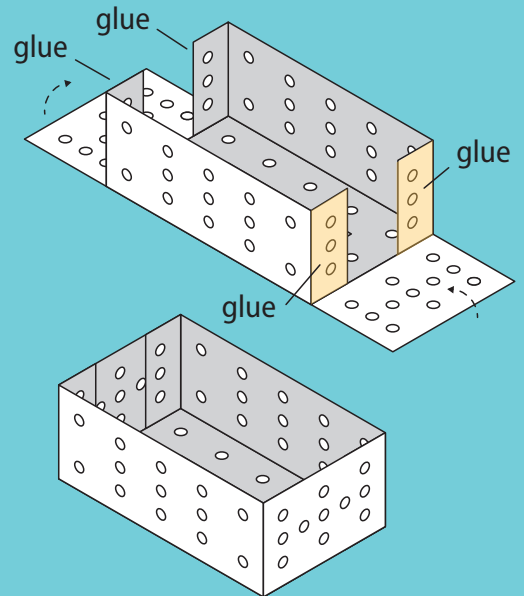


Before you start see
'Make with TechCard'
on our website.

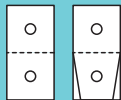
1 Make the base.



Fold and glue a TechCard
Project base.

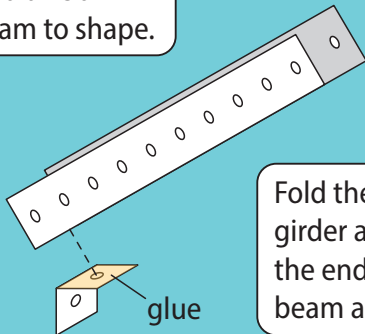


2 Make the boom.

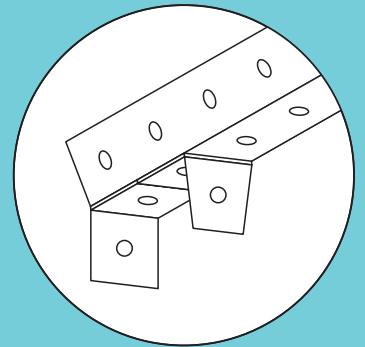
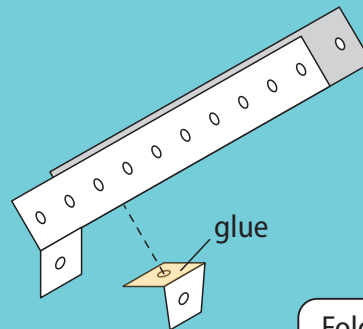


Cut two 25mm girders and
trim one to the shape shown.

Fold a 250mm
beam to shape.

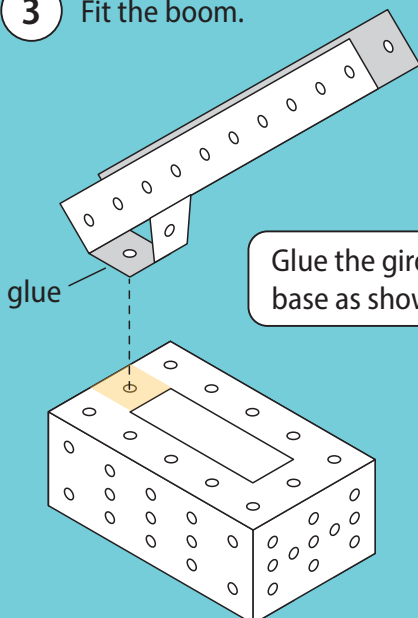


Fold the plain
girder and glue to
the end of the
beam as shown.



Fold and glue the trimmed
girder onto the beam as shown.

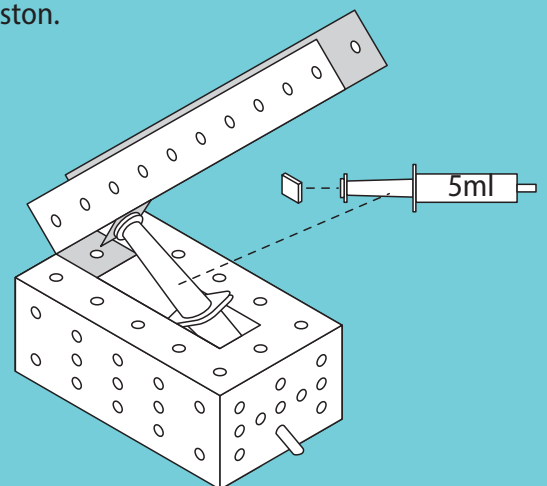
3 Fit the boom.



Glue the girder to the
base as shown.

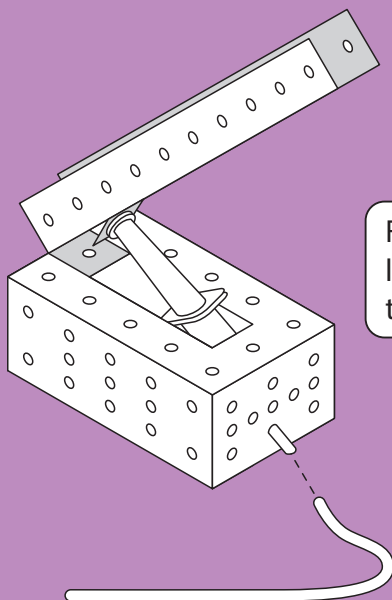
4 Fit the first piston.

Cut a sticky
foam pad to
size and fit it to
the end of a
5ml piston.



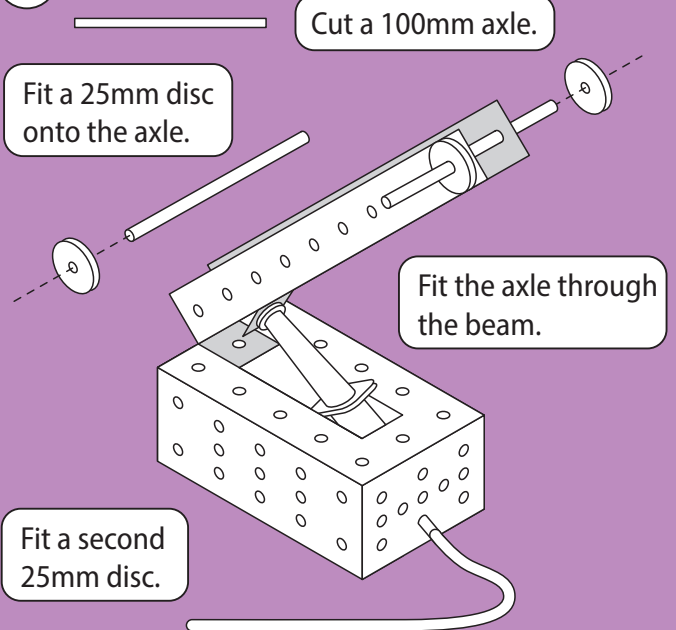
Fit the nozzle of the piston through the base where
shown. Stick the top of the piston to the girder.

5 Fit the tube.



Fit a 200mm length of tube to the piston.

6 Fit the axle.



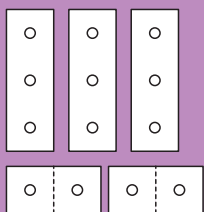
Cut a 100mm axle.

Fit a 25mm disc onto the axle.

Fit the axle through the beam.

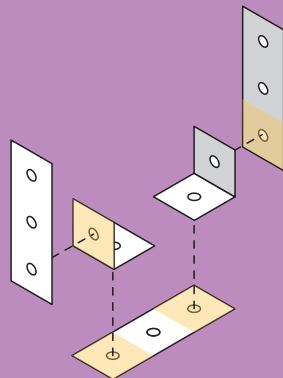
Fit a second 25mm disc.

7 Make the cradle.

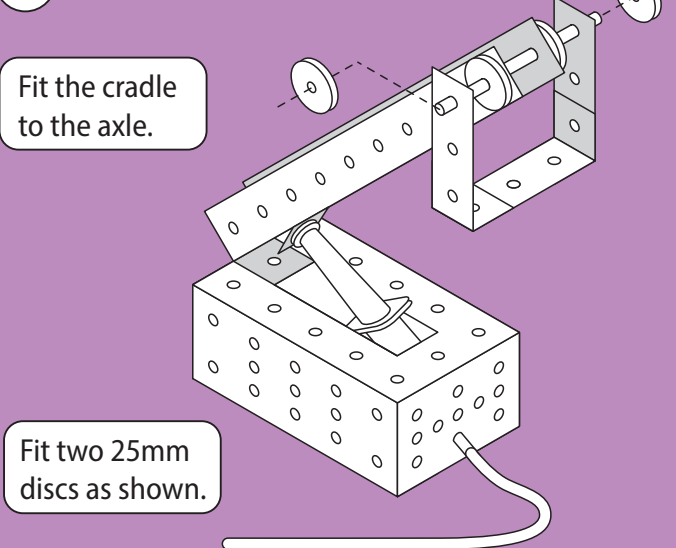


Cut three 75mm strips and two 25mm girders.

Fold the girders and glue to the strips as shown.



8 Fit the cradle.

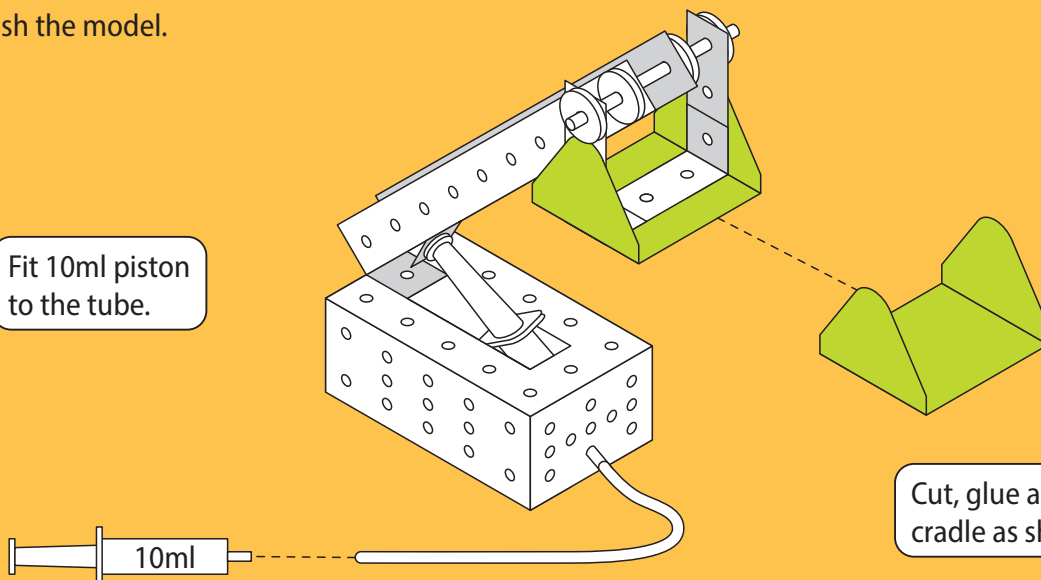


Fit the cradle to the axle.

Fit two 25mm discs as shown.

9 Finish the model.

Fit 10ml piston to the tube.



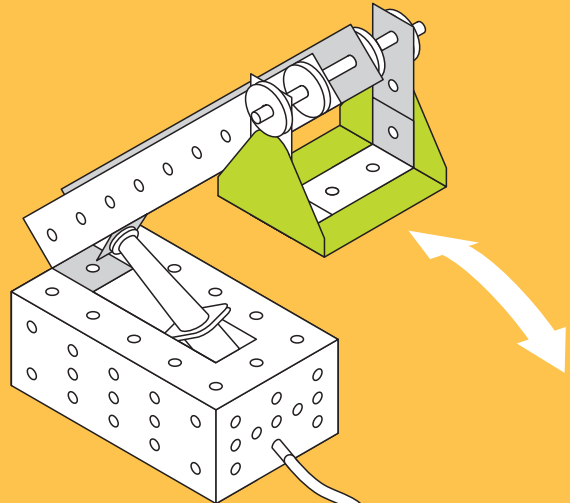
Cut, glue and fit the cradle as shown.

10 Operate your Pneumatic Hoist!

Adjust the pistons so the small piston is extended and the large piston is closed. Pull on the large piston.

As the control piston is opened, air is pulled along the inside of the tube and closes the small piston.

The arm of the hoist is a lever and the movement of the small piston is increased so the platform of the hoist moves a much greater distance.



Card Panel



25mm

25mm

Print and cut along the solid lines and fold the along dotted lines of the panel.